UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,996	03/26/2004	Ranganathan Krishnan	040214/QUALP842US	8494

70797 7590 01/23/2008

Amin, Turocy & Calvin LLP
1900 E. 9th Street
24th Floor, National City Center
Cleveland, OH 44114

EXAMINER	
REGO, DOMINIC E	

ART UNIT	PAPER NUMBER
2618	

NOTIFICATION DATE	DELIVERY MODE
01/23/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docket1@thepatentattorneys.com
hholmes@thepatentattorneys.com
osteuball@thepatentattorneys.com

Office Action Summary	Application No.	Applicant(s)	
	10/809,996	KRISHNAN ET AL.	
	Examiner	Art Unit	
	Dominic E. Rego	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 November 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-6,8-11,13-16,18-25,27-30,32-35, and 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grandolfo (US Patent #7,184,767) in view of Seshadri et al. (US Pub. No. 2005/0037818).

Regarding claim 1, Grandolfo teaches a method of communications from a piconet (Figure 6C), comprising:

engaging in intra-piconet communications *(Figure 6C, engaging in intra-piconet communications between device A2-522a and B2-522b)*;

receiving a pilot signal from a foreign terminal *(Figure 6C, Terminal 522a must receiving a pilot signal from a foreign terminal 522b in order to have a link or connection)*;

establishing a peer-to-peer connection with the foreign terminal *(See Col 11, line 20-line 36: Grandolfo teaches establishing a peer-to-peer connection with the foreign terminal B2-522b in view of piconet 505a or the foreign terminal A2-522a in view of piconet 505b)*, except for determining that the strength of the pilot signal is below a threshold.

However, in related art, Seshadri teaches determining that the strength of the pilot signal is below a threshold (Paragraphs 0011,0040, and 0049).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Seshadri to Grandolfo, in order to have peer-to-peer communication with the foreign terminal, so that the data can be transmitted constantly without deteriorating.

Regarding claims 2 and 21, the combination of Seshadri and Grandolfo teach all the claimed elements in claims 1 and 20. In addition, both especially Grandolfo teaches the method further comprising exchanging messages with the foreign terminal *(Col 11, line 20-Col 12, line 36: Grandolfo teaches exchanging message with the foreign terminal B2-522b in view of the piconet 505a)* in response to the determination that the pilot signal is below the threshold (Paragraphs 0011,0040,0049).

Regarding claims 3 and 22, the combination of Seshadri and Grandolfo teach all the claimed elements in claims 2 and 21. In addition, Grandolfo teaches the method wherein the exchanged messages comprise a transmission to the foreign terminal including a list of a plurality of terminals in the piconet *(Col 11, line 20-Col 12, line 63, especially Col 12, lines 56-63)*.

Regarding claims 4 and 23, the combination of Seshadri and Grandolfo teach all the claimed elements in claims 3 and 22. In addition, Grandolfo teaches the method wherein the foreign terminal is a member of a remote piconet, and wherein the exchanged messages comprise receiving from the foreign terminal including a list of a plurality of terminals in the remote piconet (Col 11, line 20-Col 12, line 63, especially Col

12, lines 56-63).

Regarding claims 5 and 24, the combination of Seshadri and Grandolfo teach all the claimed elements in claims 4 and 23. In addition, Grandolfo teaches the method further comprising mapping the list of terminals in the remote piconet to the foreign terminal (Col 11, line 20-Col 12, line 63, especially Col 12, lines 56-63).

Regarding claims 6 and 25, the combination of Seshadri and Grandolfo teach all the claimed elements in claim 1 and 20. In addition, Grandolfo teaches the method wherein the establishment of the peer-to-peer connection comprises negotiating a data rate and transmission power level (Col 12, lines 12-20, lines 56-63).

Regarding claims 8 and 27, the combination of Seshadri and Grandolfo teach all the claimed elements in claim 1 and 20. In addition, Grandolfo teaches the method further comprising listening for a transmission from the foreign terminal when not engaged in the intra-piconet communications *(Figure 6C, Grandolfo teaches element 522a listening for a transmission from the foreign terminal 522b when not engaged in the intra-piconet communication (Col 11, lines 20-58).*

Regarding claims 9 and 28, the combination of Seshadri and Grandolfo teach all the claimed elements in claims 8 and 20. In addition, Grandolfo teaches the method wherein the transmission is received while listening for it, the method further comprising forwarding the received transmission to a terminal within the piconet (Col 11, lines 20-58).

Regarding claims 10 and 29, the combination of Seshadri and Grandolfo teach all the claimed elements in claims 9 and 28. In addition, Grandolfo teaches the method

further comprising receiving instructions to engage in the intra-piconet communications during a first time period and to forward the received transmission to the terminal in a second time period (Col 11, lines 20-58).

Regarding claims 11 and 30, the combination of Seshadri and Grandolfo teach all the claimed elements in claims 10 and 29. In addition, Grandolfo teaches the method wherein the first time period is different from the second time period (Col 11, lines 20-58).

Regarding claims 13 and 32, the combination of Seshadri and Grandolfo teach all the claimed elements in claims 9 and 28. In addition, Grandolfo teaches the method further comprising providing feedback to the foreign terminal acknowledging that the transmission from the foreign terminal was received (Col 11, lines 47-58).

Regarding claims 14 and 33, the combination of Seshadri and Grandolfo teach all the claimed elements in claims 1 and 20. In addition, Grandolfo teaches the method further comprising receiving a transmission from a terminal within the piconet, and forwarding the received transmission to the foreign terminal (Col 11, lines 47-58).

Regarding claims 15 and 34, the combination of Seshadri and Grandolfo teach all the claimed elements in claims 14 and 33. In addition, Grandolfo teaches the method further comprising receiving instructions to engage in the intra-piconet communications during a first time period *(Figure 6C, receiving instructions to engage in the intra-piconet communications during a first period from controller 510a in view of device A2 522a)*, receiving the transmission from the terminal in a second time period *(Figure 6C, receiving the transmission from the terminal A2-522a in a second time period)*, and

forwarding the received transmission to the foreign terminal in a third time period (*Figure 6C, forwarding the received transmission to the foreign terminal B2-522b in a third time period;* Col 11, line 46-Col 12, line 20).

Regarding claims 16 and 35, the combination of Seshadri and Grandolfo teach all the claimed elements in claims 15 and 34. In addition, Grandolfo teaches the method wherein the first, second and third time period are all different from one another (Col 11, line 46-Col 12, line 20).

Regarding claims 18 and 37, the combination of Seshadri and Grandolfo teach all the claimed elements in claims 14 and 33. In addition, Grandolfo teaches the method further comprising receiving feedback from the foreign terminal indicating that the received transmission forwarded to the foreign terminal was received by the foreign terminal (Col 11, line 46-Col 12, line 20).

Regarding claims 19 and 38, the combination of Seshadri and Grandolfo teach all the claimed elements in claim 14 and 33. In addition, Grandolfo teaches the method wherein the forwarding of the received transmission to the foreign terminal comprises transmitting the received transmission to the foreign terminal a plurality of times (Col 11, line 46-Col 12, line 20).

Regarding claim 20, Grandolfo teaches a communications terminal configured to operate in a piconet (Figure 6C), comprising:

a receiver configured to detect a pilot signal from a foreign terminal (*Figure 6C, Terminal 522a must receiving a pilot signal from a foreign terminal 522b in order to have a link or connection);*

a controller configured to establish a peer-to-peer connection with the foreign terminal to support communications if the pilot signal strength is below a threshold, the controller further being configured to support intra-piconet communications (Col 11, line 20-line 36: Grandolfo teaches establishing a peer-to-peer connection with the foreign terminal B2-522b in view of piconet 505a or the foreign terminal A2-522a in view of piconet 505b), except determine its strength and determining if the pilot signal strength is below a threshold.

However, in related art, Seshadri teaches determine its strength and determining if the pilot signal strength is below a threshold (Paragraphs 0011,0040, and 0049).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Seshadri to Grandolfo, in order to have peer-to-peer communication with the foreign terminal, so that the data can be transmitted constantly without deteriorating.

Regarding claim 39, Grandolfo teaches a communications terminal configured to operate in a piconet (Figure 6C), comprising:

means for detecting a pilot signal from a foreign terminal *(Figure 6C, Terminal 522a must receiving a pilot signal from a foreign terminal 522b in order to have a link or connection)*;

means for establishing a peer-to-peer connection with the foreign terminal to support communications *(Col 11, line 20-line 36: Grandolfo teaches establishing a peer-to-peer connection with the foreign terminal B2-522b in view of piconet 505a or the foreign terminal A2-522a in view of piconet 505b);* and

means for supporting intra-piconet communications *(Figure 6C, engaging in intra-piconet communications between device A2-522a and B2-522b)*, except means for determining the strength of the detected pilot signal and determining if the pilot signal strength is below a threshold.

However, in related art, Seshadri teaches means for determining the strength of the detected pilot signal and determining if the pilot signal strength is below a threshold (Paragraphs 0011,0040, and 0049).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Seshadri to Grandolfo, in order to have peer-to-peer communication with the foreign terminal, so that the data can be transmitted constantly without deteriorating.

3. Claims 7,12,26, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grandolfo (US Patent #7,184,767) in view of Seshadri et al. (US Pub. No. 2005/0037818), and further in view of Watanabe et al. (US 2002/0080855).

Regarding claims 7 and 26, the combination of Grandolfo and Seshadri fail to teach the method wherein the establishment of the peer-to-peer connection further comprises negotiating code to spread peer-to-peer communications.

However, in related art, Watanabe teaches the method wherein the establishment of the peer-to-peer connection further comprises negotiating code to spread peer-to-peer communications (Paragraph 0027).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Watanabe to Grandolfo and Seshadri in order to perform frequency hopping using a plurality of frequency channels having different frequencies and defined in a usable frequency band (Watanabe, See abstract).

Regarding claims 12 and 31, the combination of Grandolfo and Seshadri fail to teach the method further comprising spreading the received transmission with a code.

However, in related art, Watanabe teaches the method further comprising spreading the received transmission with a code (Paragraph 0027).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Watanabe to Grandolfo and Seshadri in order to perform frequency hopping using a plurality of frequency channels having different frequencies and defined in a usable frequency band (Watanabe, See abstract).

4. Claims 17 and 36 rejected under 35 U.S.C. 103(a) as being unpatentable over Grandolfo (US Patent #7,184,767) in view of Seshadri et al. (US Pub. No. 2005/0037818), and further in view of Papasakellariou et al. (US Patent # 7,133,435).

5. **Regarding claims 17 and 36,** the combination of Grandolfo and Seshadri fail to teach the method wherein the received transmission is spread with a first code, the

method further comprising despreading the received transmission with the first code and spreading the received transmission with a second code.

However, in related art, Papasakellariou teaches the method wherein the received transmission is spread with a first code, the method further comprising despreading the received transmission with the first code and spreading the received transmission with a second code (See claim 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Papasakellariou to Grandolfo and Seshadri in order to receive signals properly.

Response to Arguments

6. Applicant's arguments filed 11/08/2007, with respect to 1-39 have been fully considered and are persuasive. The rejection of claims 1-39 has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lundby et al. (US Pub. No. 2002/0031082), Watanabe et al. (US Patent #6,834,192), Tony et al. (US Pub. No. 2001/0002912), Jonsson et al. (US Pub. No. 2003/0036350), Haartsen (US Pub. No. 2002/0075940).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dominic E. Rego whose telephone number is 571-272-8132. The examiner can normally be reached on Monday-Friday, 8:30 am-5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on 571-272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dominic E. Rego
Tel 571-272-8132

MATTHEW ANDERSON
SUPERVISORY PATENT EXAMINER